METHOD FOR MAKING THIN FILM SEMICONDUCTOR, SOLAR CELL, AND LIGHT EMITTING DIODE

Abstract of the Disclosure

The present invention provides new and improved methods for making crystalline semiconductor thin films which may be bonded to different kinds of substrates. The thin films may be flexible. In accordance with preferred methods, a multi-layer porous structure including two or more porous layers having different porosities is formed in a semiconductor substrate. A semiconductor thin film is grown on the porous structure. Electrodes and/or a desired support substrate may be attached to the grown film. The grown film is separated from the semiconductor substrate along a line of weakness defined in the porous structure. The separated thin film attached to the support substrate may be further processed to provide improved film products, solar panels and light emitting diode devices. These thin film semiconductors are excellent in crystallinity and may be inexpensively produced, thereby enabling production of solar cells and light emitting diodes at lower cost.